

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS(S): Gunma et al.
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TITLE: Method of Forming Patterns on Articles

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REQUEST FOR CORRECTED FILING RECEIPT

Sir:

Please correct the title for this application as follows:

Method of Forming Patterns on Articles

Attached are copies of the first page of the Application showing the correct title and the official Filing Receipt for this application.

Respectfully submitted,

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12/10/2003
Date

CERTIFICATION OF MAILING

I hereby certify that this correspondence is being deposited with the U.S. Postal Service by regular mail service under 37 CFR 1.10 on the date indicated below and addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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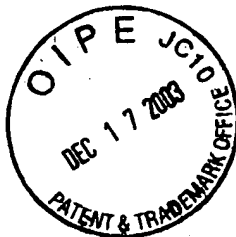


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APPL NO.	FILING OR 371 (c) DATE	ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLMS	IND CLMS
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CONFIRMATION NO. 4723
UPDATED FILING RECEIPT



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Applicant(s)

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Assignment For Published Patent Application

NOKIA CORPORATION;

Domestic Priority data as claimed by applicant

Foreign Applications

If Required, Foreign Filing License Granted: 09/16/2003

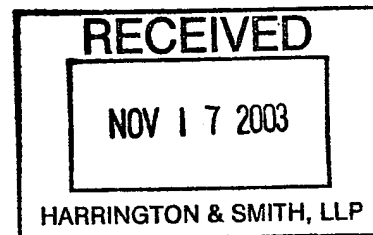
Projected Publication Date: 12/30/2004

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Early Publication Request: No

Title

Method of forming patterns on articles



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Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15**

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A Method of Forming Patterns on Articles

This invention relates to methods of forming patterns on articles. The invention also relates to articles having patterns thereon. More particularly, but
5 not exclusively, the invention relates to mobile phone housings having electrical connector patterns thereon, and to methods of forming electrical connector patterns on mobile phone housings.

In the mobile phone industry, the density of components in the housing is
10 increasing, in view of the demand to make the products smaller. There are also demands to increase the functions of mobile phones, for example by providing them with a camera facility and for the capabilities for input devices.

In order to mitigate these problems, metallic line patterns have been
15 formed on the housing of the mobile phone to accommodate the electronic components thereon. However, the formation of such line patterns economically and using mass producible methods has been difficult.

According to one aspect of this invention there is provided a method of
20 forming a pattern on an article comprising applying a carrier material to a seeding substrate to provide the pattern, the carrier material carrying a substance to allow application of a metallic material thereto, moulding the substrate to form the article, and applying the metallic material to the seeding substance on the carrier material.

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According to another aspect of this invention there is provided a moulded article comprising a substrate and a pattern on the substrate, the pattern comprising a first layer of a carrier material, carrying a seeding substance, and a second layer of metallic material, the second layer providing
30 electrical connections.

According to another aspect of this invention there is provided apparatus for forming a pattern on an article comprising a supply assembly for supplying a substrate, a first applicator for applying a carrier material to the substrate, the